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**Introducing the WHOQOL-SRPB BREF:
Developing a short-form instrument for assessing spiritual, religious and personal beliefs
within quality of life.**

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Abstract

Purpose: The aim was to develop and conduct preliminary testing of a short-form measure to assess spiritual, religious and personal beliefs (SRPB) within quality of life (QoL).

Methods: Existing data from the 132 items of the WHOQOL-SRPB (n=5087) obtained in 18 cultures, was first analysed to select the ‘best’ performing item from each of eight SRPB facets. These were integrated with the 26 WHOQOL-BREF items to give 34 items in the WHOQOL-SRPB BREF. A focus group of hospital chaplains reviewed this new short-form. The WHOQOL-SRPB BREF was administered to a UK community sample (n=230) either with an adapted WHOQOL-SRPB Importance measure, or the SWBQ. A subset received both WHOQOL measures twice.

Results: Completed in 8 minutes, the WHOQOL-SRPB BREF was acceptable and feasible; also Importance. Good internal consistency reliability was found overall ($\alpha = .85$), for the SRPB domain ($\alpha = .83$), and Importance ($\alpha = .90$). Domains were moderately correlated. Domain test-retest reliability was acceptable in both WHOQOL measures, except for SRPB Importance. Sleep was linked with religious beliefs. Hope and wholeness were widely associated with non-spiritual facets. Factor analysis (ML) of items largely confirmed the WHOQOL domain structure, adding SRPB as a significant fifth domain. Internally, SRPB distinguished religious from existential beliefs, and was validated by association with personal and transcendental wellbeing from the SWBQ.

Conclusion: Preliminary evidence shows that the WHOQOL-SRPB BREF is sound for use in and beyond health care. Extracted from a measure already available in 18 languages, this short-form can be immediately used, where such translations exist.

Words 250

Introduction

Spiritual well-being is of growing importance in health care [1] but as spiritual QoL assessments are usually designed for chronic health conditions [2][3], less is known about its presence in general populations. Defining spiritual QoL is challenging [4]. Spiritual aspects are side-lined in assessments, despite evidence that it is valued by users [5]. Some researchers see it as integral to mental well-being [6], subsuming it within a psychological or social domain [7]. Other measures do not score religious and spiritual QoL separately [8]. However growing evidence indicates that spiritual QoL is a distinctive, important and independent concept in QoL assessment [9][10].

Despite reports that high spiritual QoL is linked to effective coping with chronic and life threatening illness [9][11][12][13][14], practitioners remain sceptical of its value, seeing it as ‘too distal’ to mainstream healthcare objectives [15], clinically impracticable, and hard to interpret [16]. ‘Long’ QoL measures have not assisted usage, being seen as too cumbersome to administer in busy clinics, especially to the seriously ill or disabled. Ironically these groups probably need QoL assessment most. In long measures, the spiritual domain is seen as most dispensable. Short assessments that are fast to administer, score and interpret within contemporary health and social services are therefore attractive for pragmatic reasons and to encourage routine use.

A cross-cultural person-centred approach designed by the WHOQOL Group [17] strengthens the case for routinely assessing a spiritual domain. During development of the WHOQOL-100, patients, health professionals and community members in 15 diverse cultures noticed that spiritual QoL was absent from the concept. This was subsequently included as a rudimentary concept in the WHOQOL-100 [18]. This holistic, multilingual instrument has high cross-cultural applicability and in conceptual terms, represents a step beyond conventional generic QoL measures [19]. One purpose in developing a spiritual, religious and personal beliefs (SRPB) domain within the WHOQOL-SRPB was to expand and establish a comprehensive and accurate cross-cultural assessment of spiritual QoL that could be used to assess not just people from the world’s major religions, but also diverse spiritual beliefs, and as a new departure, a multiplicity of personal beliefs.

The aim of the present research was to develop and test a short-form of the WHOQOL-SRPB [20], and to adapt the WHOQOL-SRPB Importance measure to use with it. A short-form containing relevant, important concepts, with good psychometric properties, is fundamental to its acceptance in health care and research.

Methods

First, existing international data were assessed to select the ‘best’ item from each facet to include in the measure. A focus group of users then reviewed the new short-form. At Stage 2, the new measure was pilot tested.

Samples

Stage 1. At the first phase, sick and well participants (n=5087) were sampled in 18 field sites (16 countries): Argentina; Brazil (Porto Alegre and Santa Maria); China; Egypt; Israel; India (Bangalore and Pondicherry); Italy; Japan; Kenya; Lithuania; Malaysia; Spain; Thailand; Turkey; UK and Uruguay. WHOQOL quotas [18] were applied for gender, age band and health status.

During the second phase, hospital chaplains with professional experience of how patients, relatives and professionals view spiritual QoL, participated in a focus group (FG).

Stage 2. Adults (18+years) with a wide range of demographic, marital, occupational and educational characteristics were recruited in line with WHOQOL quotas [18]. Media (e.g. radio, newspapers) primed recruitment in groups and institutions: charities (e.g. childbirth), recreational groups (e.g. theatre), education (e.g. universities), worksites (e.g. police), and community (e.g. libraries, cafes).

Procedures

Ethical approval was obtained from the University of Bath, Psychology Ethics Committee.

Stage 1. The international WHOQOL-SRPB items were tested to extract the new short-form from its long-form. Unpublished psychometric analyses (O’Connell, 2002) were tabulated with published findings not previously used for this purpose [20]. The performance of each item was assessed within its own facet, to identify the ‘best’ facet item. Procedures outlined by the WHOQOL Group to extract WHOQOL-BREF items from the WHOQOL-100 were followed [21].

Secondly a user review of the new WHOQOL-SRPB BREF instrument was undertaken at a national meeting of hospital chaplains in a medical teaching hospital. After general discussion about QoL, the WHOQOL-SRPB BREF was completed. Oral feedback was obtained, using semi-structured techniques, guided by the conceptual structure of the questionnaire and layout. The item contents, formatting and instructions were evaluated. Prompts used included relevance, acceptability, comprehensiveness and feasibility.

Stage 2 A community survey of QoL was conducted in two rounds in urban southern England. One subsample completed the WHOQOL-SRPB BREF with the WHOQOL-SRPB

Importance assessment. A nested subset of these completed both questionnaires twice in a repeated-measures design. The other subsample completed the WHOQOL-SRPB BREF with the Spiritual Well-Being Questionnaire (SWBQ) once, in a cross-sectional design.

Instruments

The WHOQOL-SRPB: The long-form WHOQOL-SRPB contains 132 items organised in 33 facets (4 per facet). Of these, 100 are taken from the WHOQOL-100 (25 facets), and 32 SRPB items added. Although the WHOQOL-100 includes a spiritual domain, it contains only one facet so this limited information precludes it from being scored independently. For this reason, it is scored with the psychological domain [10]. Four domains in the WHOQOL-100 were scored, and this was retained in scoring its short-form; the WHOQOL-BREF [21].

An expanded Spiritual, Religious and Personal Beliefs (SRPB) domain containing eight new facets, was later developed for inclusion in the WHOQOL-SRPB, replicating WHOQOL-100 procedures [17], and tested simultaneously in 18 cultures (see Principal Investigators listed in this publication). To score the WHOQOL-SRPB [20], the single spiritual facet from the WHOQOL-100 was added to the eight new SRPB facets, totalling nine in the new spiritual domain. The WHOQOL-SRPB shows good construct validity from exploratory factor analysis and item/domain correlations, with excellent overall internal consistency reliability (0.93). Scores discriminate different socio-economic and spiritual styles [20].

The present study aimed to construct a 34 item WHOQOL-SRPB BREF by combining one item extracted from each of the eight new SRPB facets in the WHOQOL-SRPB, with the 26 WHOQOL-BREF items, extracted from the WHOQOL-100. Of these, 2 were general items on health and overall QoL and 32 were facet specific items. The intensity of personal, spiritual and religious beliefs and religious practice, are separately assessed. Socio-demographic and health variables are collected.

WHOQOL-SRPB Importance Assessment: Importance ratings were designed to match the QoL concepts (facet) in the WHOQOL-100 [20], so similar importance items were designed to assess new facets of the WHOQOL-SRPB. A total of 34 importance items combined eight new SRPB facet items with 26 matched items selected from a larger number in the WHOQOL-100 Importance measure [22] (see [23] for selection). Although the WHOQOL-SRPB Importance measure was designed to be conceptually compatible with the WHOQOL-SRPB BREF, it can also be used with the similarly structured WHOQOL-SRPB. No time frame is stipulated as Importance evaluations are assumed to be stable; however, no stability evidence is available.

Spiritual Well-Being Questionnaire (SWBQ)[24]. This 20-item measure was chosen for its good psychometric properties and spiritual concepts which are assessed on a 5-point scale. Four scored domains address personal, communal, environmental and transcendental spiritual well-being.

Analysis Plan

Stage 1 International analysis. After evaluating the WHOQOL-SRPB dataset for missing values and normality, inter-item and item-domain correlations for SRPB items were completed (acceptability criterion $r > .4$). Standardised Cronbach's alpha (with item substitution), and loadings from Principal Components Analysis, were examined. By seeking the greatest strengths i.e. the highest loading and strongest association, performance across the whole set of results was evaluated, to select the 'best' item within each SRPB facet for inclusion in the WHOQOL-SRPB BREF.

Eight selected SRPB items were combined with 26 WHOQOL-BREF items. The single WHOQOL-BREF spiritual item was incorporated into the SRPB domain for further analysis in the WHOQOL-SRPB BREF, as modelling of UK WHOQOL-SRPB data had shown that these nine facets may be scored as a fifth independent spiritual domain [19]. As WHOQOL items sharing the same response scale are organised into blocks to speed completion, new SRPB items were inserted at the end of their respective response scale block in the WHOQOL-SRPB BREF. Socio-demographic, health and intensity ratings of religious, spiritual and personal beliefs from the WHOQOL-SRPB were included.

Collated qualitative information from the focus group (FG) discussion was independently thematically coded by two researchers, and negotiated until high agreement on themes was reached.

Stage 2 WHOQOL-SRPB BREF analysis. Following data conditioning, a syntax file (SPSS v.18) derived from the WHOQOL-BREF manual was adapted to score and transform the WHOQOL-SRPB BREF items, and score Importance. Standardised Cronbach's alpha (with item substitution) tested internal consistency reliability (criterion 0.7). Mapped Pearson correlations (r) between SRPB and other facets, domains, and overall QoL and health scores (minus the item) were examined.

Factor analysis (FA) with maximum likelihood (ML) extraction was chosen to examine the construct validity of the WHOQOL-SRPB BREF as the data was fairly normally distributed and a theoretically uncontaminated solution was sought. FA was completed twice, for all items,

and for the SRPB domain items alone. Kaiser-Meyer-Olkin sampling adequacy and Bartlett's sphericity tests were examined [25]. Components were retained where eigenvalues >1 ; a scree test guided the cut point. Orthogonal rotation (Varimax with Kaiser normalization) was performed, and loadings $> .32$ identified, to investigate whether SRPB is an independent QoL domain, and whether the measure represents an integrated concept of five predicted domains [26].

Test-retest reliability was assessed by correlating domain scores from the WHOQOL-SRPB BREF obtained twice, 8-10 weeks apart (criterion $r = .75$) [27]. Student's t (paired) investigated the stability of WHOQOL-SRPB BREF domains and Importance domains. Investigating SRPB concurrent validity, Pearson correlations (one-tailed) between SWBQ and WHOQOL-SRPB BREF dimensions were completed. A stepwise multiple linear regression using the SRPB domain as the dependent variable and four SWBQ domains as independent variables, further examined this relationship.

Results

Stage 1 Developing the WHOQOL-SRPB BREF.

For item selection, the various psychometric properties of each item were tabulated (see Table 1; selected item in **bold**). All inter-item correlations were acceptable and item-domain correlations were moderate to strong ($r = .62 - .94$). For six facets (S2, S4, S6, S8, S10 and S14), a single item was either outstanding on both results, or outstanding on one result with the second result the same as another item. For two facets where the outcome was unclear (S1 Connection; S3 Awe), priority was given to higher factor loadings over correlation size. Wording for pairs of items was scrutinised for clarity before selection was finalised. The eight selected items showed the 'best' range of psychometric properties compared to other items within their facet. As each represents a different facet of SRPB, they are referred to as 'facet items'.

INSERT TABLE 1 HERE

A 'user' review of the new short-form measure involved two women and six men, who participated in an FG. Employed by NHS hospitals and/or hospices, some also provided community pastoral care/counselling or held teaching/research posts. All were senior professionals with extended experience of patients, relatives and health professionals.

The participants strongly endorsed the idea that a high quality short-form QoL measure that integrated a spiritual domain would be interesting and useful. The new scale was seen as ‘a significant development’, and ‘an advance’. Themes included the importance of having a measure that could be quickly completed without undue burden. Specifically, a short form WHOQOL-SRPB was seen as ‘beneficial to practice’. If available, some said they would ‘seriously’ consider using it. Ambiguous wording of the hope and optimism item was noted (see Table 2). The group lasted 40 minutes. Responding to feedback, changes that did not infringe WHO copyright were made. These qualitative findings consolidated the contents of the WHOQOL-SRPB BREF.

Stage 2: Preliminary Psychometric testing of the WHOQOL-SRPB BREF

Acceptability and Feasibility: There were very few missing values for any measure (SWBQ 0.2%). Two outliers were deleted as unacceptable ($z > 3.29$) [27]. Negative skew of physical and social domain scores was acceptable [28]. The WHOQOL-SRPB BREF took 8 minutes (mean) to complete; the Importance measure 5.5 minutes. Completion times for ill and well groups were not significantly different ($p > .05$). The new short-form appears acceptable and feasible to use.

Sample characteristics: The total sample ($n=230$) contained $n=134$ in the first subsample and $n=96$ in the second. Of the total, 55.7% were women and 44.3% men. The mean age was 39.9 years (SD 17.7), and age bands showed fairly even distribution across the range (18-89 years). Three quarters (74.5%) were well and 25.5% unwell. Thirty % were educated to secondary level, 42% were graduates and 28% postgraduates. Most were single (42%) or married (33%); 12% lived as married, 2% were separated, 6% divorced and 5% widowed. Unhealthy people in this community sample lived with a wide ranging of acute and chronic conditions; arthritis, infections, diabetes, cardiovascular, respiratory and dermatological conditions.

Repeated measures were given to 115 participants (68 female; mean age 39.4 (± 17.9)) over 9.5 weeks following screening for the absence of major life events.

High means and small standard deviations (SD) for WHOQOL-SRPB BREF facets (Table 2) showed that QoL was highest for hope & optimism, meaning and purpose in life, and spirituality, and poorest in terms of connectedness, faith and spiritual strength. Intensity of beliefs were skewed; 45.5% had no religious beliefs and for 3.7% these were strong. Few (8.2%) held strong spiritual beliefs. Strong personal beliefs were held by 44.8%; extremely strong by 20.1%. Only 3.7% reported weak or no personal beliefs.

INSERT TABLE 2 HERE

Internal consistency reliability

Cronbach's alpha for the WHOQOL-SRPB BREF ($\alpha=.85$) showed that internal consistency reliability was very good. For the SRPB domain, alpha was highest at .83; other QoL domains were acceptable (physical (.76), environmental (.70), psychological (.70)) but social was unacceptable (.50). Sequential substitution of items showed that each SRPB item made a positive contribution to the new short form (Table 2).

Construct Validity

Mapped correlations between SRPB, other domains and overall QoL ($r=.23$ ($p = .01$)) showed a moderately strong positive association with the psychological domain, as expected ($r=.43$, $p<.001$), then environment ($r= .30$, $p<.001$), social ($r=.27$, $p<.001$), and physical QoL ($r=.24$, $p = .006$). Correlations between SRPB items and domains (Table 2) confirmed that most correlate most highly with the 'parent' domain (criterion >0.4). Strong correlations were found between spiritual strength, faith and spiritual connectedness, and moderate, acceptable ones for inner peace, wholeness and spirituality. Below acceptability, awe (.37) and hope (.39) correlated similarly with the psychological domain as with SRPB (.37 for both), and hope showed a similar association with social QoL (.39). Findings confirm that seven SRPB items are best located in this domain but two facets are marginal.

Significant correlations ($r >.30$; $p<.0001$) between SRPB and non-spiritual facets showed that sleep was positively associated with religious facets on spiritual connection (.43), spiritual strength (.39), faith (.31), and lost purpose (-.31). Peace was connected to concentration (.30) and having information (.30), suggesting education. Awe was linked to body image/appearance (.39), having energy (.38) and access to leisure (.40). Hope and wholeness showed numerous connections with non-spiritual facets; both included personal relations (.36; .37 respectively). Wholeness was connected to positive feelings (.31), physical environment (.32), body image (.32) and self-esteem (.47). Hope was associated with being mobile (.31), access to health services (.30), physical safety and security (.32), and information access (.41).

Factor Analysis (FA)

The 9-item SRPB domain was tested to see if it was a unified concept. Factor analysis (FA) was appropriate (X^2 ($df = 36$) = 859.62, $p < .0001$), and sampling adequate. (.70). Two factors explained 49.8% of the total variance (see Table 3). The first addressed religious beliefs

(27.7% of variance), containing the highest item loadings and including spiritual connection, faith, spiritual strength and wholeness. The second addressed existential concerns (22.1%), integrating hope, inner peace and purpose in life. The factors reflect belief subsets previously identified within SRPB [5].

INSERT TABLE 3 HERE

A similar analysis of all WHOQOL-SRPB BREF items (see Table 4) showed that *FA* was appropriate ($X^2 (df = 496) = 2780.6, p < .0001$), and sampling adequate (.80). Eight components (eigenvalues >1) accounted for 48.69% of the total variance but the scree indicated retention of five or six components. However the sixth component added only .19% to the variance, and many items cross-loaded. When *FA* was rerun, constraining the solution to five factors, 41.0% of the variance was accounted for. As the unconstrained eight factor solution (Table 4) showed meaningful concurrence with the theoretical domain structure of the WHOQOL it is described. Factors 1 and 2 were spiritual; the first on existential beliefs contained purpose, peace and hope with negative mood (9%). The second on religious beliefs contained spiritual connection, faith, spiritual strength, and sleep (8.4%). *Factor 3* (7.4%) essentially showed environmental QoL, covering physical safety, physical environment, financial resources, information, home environment, health services with social support and wholeness. It explained the same variance as psychosocial issues in *F4* (7.4%) which included positive feelings, body image, self-esteem, personal relations and sex-life. Physical health (5.4%) (*F5*) combined pain, dependence on treatment and activities of daily living, and was supplemented by independence items on mobility and work (*F7*)(3.7%). An unusual positive wellbeing factor (*F6*; 5.3%) was composed of energy, leisure and awe. Only cognition (2.2%) formed the remaining significant factor. As expected from data collected in a single culture, the validity of the multinational concept did not map identically onto this data.

INSERT TABLE 4 HERE

Test-retest reliability

Correlated SRPB domain scores from two time periods 9.5 weeks apart, were significant, strong and acceptable ($r = .80; p < .001$) [29], confirming good test-retest reliability. Although significant, other domain correlations were not acceptable (criterion $r = .75$). Environment was more stable ($r = .72, p < .001$) than physical ($r = .55, p < .001$), psychological ($r = .58, p < .001$),

social ($r = .59$, $p < .001$), or overall QoL ($r = .50$, $p < .001$). *T-tests* showed no significant difference for the SRPB domain ($t = .64$, $p = .52$), or other domains over time ($p > .05$), indicating good test-retest reliability for all WHOQOL-SRPB BREF domains (Table 5).

The WHOQOL-SRPB Importance measure

Facet means showed that personal beliefs (4.02), inner peace (3.59) and awe & wonder (3.28) were the most important SRPB facets and connectedness, faith, and spiritual strength were least important but with greater variability (Table 2). Connectedness ($t = -2.30$ (132), $p = .02$), and spiritual strength ($t = -2.07$ (132), $p = .04$) were more important to unhealthy participants than healthy, although effect sizes were small ($d = 0.2$). Similar findings were previously reported for the WHOQOL-SRPB [20]. On both occasions, overall QoL was most important. Among the domains, SRPB was least important (see Table 5) but still moderately so (>50).

INSERT TABLE 5 HERE

Internal consistency reliability of all WHOQOL-SRPB BREF Importance items was excellent ($\alpha = .90$). Except for the spiritual domain ($t = 2.55$; $p = .03$), no difference between time periods was found for domain importance scores (see Table 5). Item correlations between the two time points were strong ($r = .92$; $p < .001$) [29], and stronger than for other domains, where only physical QoL was acceptable ($r = .77$, $p < .001$). Psychological ($r = .72$, $p < .001$) and environmental domains ($r = .72$, $p < .001$) were marginal; social QoL ($r = .67$, $p < .001$) was least stable.

Validating the WHOQOL-SRPB BREF with the SWBQ

There were strong to moderate predicted correlations ($p < .0001$) between domains for SRPB and SWBQ. The strongest was with personal SWB (.71), then transcendental (.64), communal (.56) and environmental SWB (.40). For items, very strong correlations were confirmed between Transcendental SWB and faith (.89), spiritual connection (.89), and spiritual strength (.82). Personal SWB most strongly correlated with hope (.59), peace (.57), wholeness (.57), meaning (.51), and purpose (.44). Environmental SWB was associated with awe (.41) and communal SWB with meaning (.45) and purpose (.42).

Stepwise multiple regression analysis of the SWBQ domains and SRPB as dependent entered personal ($Rsq\ adj = .49$; $beta .57$) and transcendental ($Rsq\ adj = .21$; $beta .48$) into the model, explaining 70.6% of SRPB. Communal and environmental SWB were not entered

Discussion

Streamlining the WHOQOL-SRPB to create a shorter WHOQOL-SRPB BREF is vital to its widespread use as a patient- and person-reported outcome measure (PROM). This new 34 item instrument will be less burdensome and therefore more acceptable to users who complete and administer it. However it is essential to know whether any short-form retains its long-form properties, as fewer items can undermine performance. Accurate information gained from high quality short-forms have an important role to play in promoting the routine use of QoL measures in practice and clinical trials.

Integrating a comprehensive spiritual domain into a short-form generic QoL measure could improve its potential for uptake in diverse health care settings and beyond. Among these measures, the WHOQOL Group devised a novel cross-cultural, person-centred methodology. During the WHOQOL development users world-wide observed that SRPB was an important but missing concept from the proposed assessment. The multi-lingual WHOQOL-SRPB instrument is reliable and valid [20], and these valued properties have been confirmed by the present research to characterise its extracted short-form - the WHOQOL-SRPB BREF.

Through recruiting from the community where specific spiritual, religious and personal beliefs were not explicitly targeted, we demonstrate that spiritual QoL assessment is acceptable to general populations. This is an important departure as previous instruments tend to focus on the spiritual QoL of patients in chronic and terminal care [30][31]. The present study adds evidence and weight to the argument that spiritual QoL is relevant and important to well people. An implication from this is that the WHOQOL-SRPB BREF could be administered in a much wider range of settings beyond health, than ever before. The WHOQOL-SRPB BREF is an ideal tool to use in primary care because it can assess almost every type of patient, irrespective of their health state and status. As sick and well completion times were no different, it is pragmatic to use the WHOQOL-SRPB BREF in a variety of health, social and educational contexts, and this should be explored.

Compared with the large international survey that tested the 132 item WHOQOL-SRPB, this modest UK sample shows that the WHOQOL-SRPB BREF delivers a credible psychometric performance with only 34 items. It shows relatively good internal consistency reliability ($\alpha = .85$), compared with its 132 item long-form ($\alpha = .93$) [20]. Moreover, the SRPB domain had the highest internal consistency reliability of any domain in the short (.83) and long-forms (.91). While the physical domain performed similarly well in both, lower acceptable values were found for psychological and environmental short-form domains. Only the short-form social domain was

unacceptable, although marginal previously. This domain limitation may be due to only three social items and smaller sample size.

Over 9.5 weeks without major events, test-retest reliability was good for the WHOQOL-SRPB BREF ($r = .80$), and especially for the SRPB domain. Stability for Importance domains was also good, except for spiritual importance. As test-retest reliability has not been previously tested for and WHOQOL-SRPB measures, these findings are new.

Construct validity tests confirmed that most SRPB items were most closely linked to the spiritual domain, although as expected [32], awe and hope were marginally associated with psychological and social domains. However when scrutinised for reallocation to another domain, the weight of evidence was nugatory. This pattern concurs with findings modelled from previous UK WHOQOL-SRPB data [19], so this ambiguity may be a specific cultural feature. The SRPB domain had good conceptual cohesion as two FA components described a distinctive internal architecture; the first reflected religious beliefs, combining faith, spiritual strength, spiritual connection and wholeness. The second on spiritual and personal beliefs was represented by peace, hope and purpose in life. These findings concur with previous research that differentiates religious from existential areas [8][5]. To some extent, these concepts are endorsed and validated by the close associations found between SRPB, and transcendental and personal subjective wellbeing, assessed by the SWBQ. An advantage of using the WHOQOL-SRPB is that religious, spiritual and personal beliefs can be separately assessed, while simultaneously scoring them as interlinked concepts.

When the 32 specific items were analysed, SRPB was confirmed as an independent domain of QoL; this was because the first two factors were spiritual, reflecting existential and religious beliefs also. Independence of SRPB within the QoL concept is commensurate with modelled findings [19]. A comprehensive environmental factor, a psychosocial factor, and a pair of factors addressing physical health and functioning, serve to confirm a predicted five domain model, and support WHOQOL construct validity. As expected, this UK data did not perfectly fit the multinational construct, as the original WHOQOL construct was defined through statistical consensus of data pooled from 15 countries world-wide, including UK [18]. However our results provide sufficient evidence to indicate that a distinctive and valid fifth spiritual domain can be built onto the original four domains. Consequently we propose that the WHOQOL-SRPB BREF is scored as five domains. This conclusion is underscored by the accumulated weight of evidence derived from adding eight SRPB items to the original 26. However the construct validity of this short-form measure remains indicative until tested cross-culturally.

Three unexpected features emerged from testing this QoL concept. Good sleep was consistently associated with spiritual strength, connection, and faith, pointing to an unusual link between physical health and religious quality of life. A positive wellbeing factor that combined energy, leisure and awe seemed to characterise wellness, and the emergence of this feature may have been masked by illness samples previously. Thirdly, hope, wholeness and awe were extensively linked with the original concept through a range of facets in environmental and psychological QoL. Where these three facets are assessed, the results may continue to perpetuate debate about the distinctiveness of a spiritual domain.

Our findings differ from those of the long-form because we recruited only in one culture. The quota sample was non-representative for spiritual, religious and personal beliefs [20], and health status. Although its heterogeneity strengthens the pilot research, it is also a limitation. Few participants were intensely religious or spiritual, and those with weaker beliefs saw inner peace, awe, hope and personal beliefs as most important to their QoL, similar to atheists [19]. Furthermore, the ‘aggressively secular’ population [32] that characterises contemporary Britain, shows that answering SRPB questions about QoL is acceptable, so the easy administrations of the SRPB domain in this culture represents a positive ‘litmus test’ for feasibility elsewhere. Our FG informants endorsed this view although saturation point was not reached. Moreover, an internationally agreed, assessable concept of personal beliefs [20] extends access to perceptions of a range of users wider than before. The community sample size was ‘fair’ (as the study was longitudinal) so numbers may have limited FA reliability. However the FA solution was quite stable, as only 9 rotated iterations were needed. Future interventions, and trials of new treatments, should further assess sensitivity to change in WHOQOL-SRPB BREF scores, and minimal clinical difference.

A newly adapted, shortened WHOQOL-SRPB Importance measure was successfully piloted for the first time, and can now be used alongside long or short-form SRPB measures. Reliability is very good, with excellent internal consistency supporting accuracy in individual assessment as a PROM, and sound test-retest reliability in four of the five domains. High stability was shown as implicitly assumed, except for the spiritual domain; reasons for instability require further investigation.

The short-form WHOQOL-SRPB BREF is now available on request for further field trials and use. Although more investigations are needed to see whether it can be used in other cultures, developing a short-form represents an exciting step towards the successful incorporation of spiritual QoL assessment within mainstream health and social practice, and research. As the 34 WHOQOL-SRPB BREF items were extracted from a long-form of

international items agreed by 18 countries, its short-form items can be immediately extracted, and used, wherever such translations exist.

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Table 1. Properties of WHOQOL-SRPB items (n=5087).¹

WHOQOL-SRPB Facets and Items	Inter-item correlation to predicted facet (O'Connell, unpublished)	Factor Analysis loading (WHOQOL-SRPB Group, 2006)
Facet S1: Connection to a Spiritual Being		
S1.3 To what extent does any connection to a spiritual being help you get through hard times?	0.86	0.84
S1.4 To what extent does any connection to a spiritual being help you to tolerate stress?	0.87	0.83
S1.5 To what extent does any connection to a spiritual being help you to understand others?	0.84	0.81
S1.7 To what extent does any connection to a spiritual being provide you with comfort/reassurance?	0.83	0.79
Facet S2: Meaning and Purpose in Life		
S2.1 To what extent do you find meaning in life?	0.62	0.72
S2.2 To what extent does taking care of other people provide meaning of life for you?	0.48	0.57
S2.5 To what extent do you feel your life has a purpose?	0.66	0.72
S2.7 To what extent do you feel you are here for a reason?	0.56	0.53
Facet S3: Awe and Wonder		
S3.1 To what extent are you able to experience awe from your surroundings? (e.g. nature, art, music)	0.62	0.84
S3.2 To what extent do you feel spirituality touched by beauty?	0.65	0.81
S3.3 To what extent do you have feelings of inspirations/excitement in your life?	0.52	0.57
S3.4 To what extent are you grateful for the things in nature that you can enjoy?	0.56	0.68
Facet S4: Wholeness and Integration		
S4.1 To what extent do you feel any connection between your mind, body and soul?	0.55	0.62
S4.2 How satisfied are you that you have a balance between mind, body and soul?	0.64	0.72
S4.3 To what extent do you feel the way you live is consistent with what you feel and think?	0.57	0.70
S4.4 How much do your beliefs help you to create coherence between what you do think and feel?	0.59	0.65

¹ The single item per facet selected for the WHOQOL-SRPB BREF is indicated in **bold**

Facet S5: Spiritual Strength		
S5.1 To what extent do you feel inner spiritual strength?	0.73	0.66
S5.2 To what extent do you find spiritual strength in difficult times?	0.72	0.72
S5.3 How much does spiritual strength help you to live better?	0.80	0.72
S5.4 How much do you feel strong within yourself?	0.45	0.69
Facet S6: Inner Peace		
S6.1 To what extent do you feel peaceful within yourself?	0.73	0.80
S6.2 To what extent do you have inner peace?	0.76	0.80
S6.3 How much are you able to feel peaceful when you need to?	0.65	0.73
S6.4 To what extent do you feel a sense of harmony in your life?	0.65	0.69
Facet S7: Hope and Optimism		
S7.1 How hopeful do you feel?	0.73	0.74
S7.2 To what extent are you hopeful about your life?	0.75	0.74
S7.3 To what extent does being optimistic improve your quality of life?	0.65	0.76
S7.4 How able are you able to remain optimistic in times of uncertainty?	0.60	0.70
Facet S8: Faith		
S8.1 To what extent does faith contribute to your well-being?	0.89	0.81
S8.2 To what extent does faith give you comfort in daily life?	0.92	0.83
S8.3 To what extent does faith give you strength in daily life?	0.91	0.83
S8.4 To what extent does faith help you to enjoy life?	0.83	0.79

Table 2. Preliminary psychometric properties of the SRPB domains items selected for the WHOQOL-SRPB BREF

SRPB Facet items	Mean (±)	All Items $\alpha=.85$	SRPB domain $\alpha=.83$	Item correlations with SRPB domain	Importance of SRPB: Total sample	Importance: Healthy	Importance: Unhealthy
Connectedness	2.18 (1.33)	.84	.76	.73**	2.37 (1.41)	2.18 (1.36)	2.79 (1.44)
Spirituality ²	3.63 (0.87)	.84	.78	.41**	4.02 (0.84)	4.00 (0.81)	4.07 (0.91)
Faith	2.20 (1.30)	.83	.75	.76**	2.69 (1.40)	2.62 (1.36)	2.86 (1.49)
Wholeness	3.61 (0.76)	.83	.78	.53**	2.75 (1.39)	2.72 (1.37)	2.83 (1.41)
Meaning & purpose	3.81 (0.81)	.84	.79	.45**	2.77 (1.39)	2.70 (1.35)	3.00 (1.43)
Awe & wonder	3.64 (1.04)	.83	.79	.37**	3.28 (1.15)	3.25 (1.17)	3.37 (1.11)
Spiritual strength	2.42 (1.37)	.84	.74	.79**	2.74 (1.35)	2.58 (1.29)	3.10 (1.42)
Inner peace	3.12 (0.93)	.83	.77	.53**	3.59 (1.05)	3.56 (1.00)	3.66 (1.15)
Hope & optimism	3.98 (0.64)	.84	.79	.37**	3.01 (1.36)	2.92 (1.35)	3.22 (1.37)

** $p<.01$

² Transferred from the WHOQOL-BREF and scored as ninth item in the new SRPB domain

Table 3. Factor loadings of the nine SRPB items in the WHOQOL-SRPB BREF (orthogonal rotation; maximum likelihood extraction; Varimax).

Facet	Item	F1	F2
Spiritual Connection	To what extent does any connection to a spiritual being help you to get through hard times?	.95	-.24
Faith	To what extent does faith give you comfort in daily life?	.84	.04
Spiritual strength	How much does spiritual strength help you to live better?	.79	.07
Hope & optimism	To what extent do are you hopeful about your life?	.02	.71
Inner peace	To what extent do you have inner peace?	.09	.81
Wholeness & integration	How satisfied are you that you have a balance between mind, body and soul?	.34	.13
Awe & wonder	To what extent are you able to experience awe?	.28	.25
Spirituality	To what extent do you feel life to be meaningful?	.21	-.01
Meaning & purpose	To what extent do you feel your life has a purpose?	-.08	.83
<i>Eigenvalues</i>		2.85	2.36
<i>% of variance</i>		27.46	22.35

Table 4. Factor loadings of the 32 specific items of the WHOQOL-SRPB BREF (orthogonal rotation; maximum likelihood extraction; Varimax).

WHOQOL-SRPB BREF Facets	Factors							
	1	2	3	4	5	6	7	8
Pain	-.131	.058	-.142	-.071	-.786	.041	-.174	-.025
Treatment	.006	.094	.129	-.147	-.478	-.069	-.047	-.005
Positive feelings	-.163	.100	-.051	.483	.166	.166	.026	-.065
Spiritual connection	-.197	.914	.020	.182	-.056	.020	-.049	.035
Purpose	.825	-.114	.078	-.069	.072	-.032	.046	.128
Faith	.078	.847	.053	.082	-.142	.032	.058	.386
Meaning	-.064	.164	.108	.200	.093	.122	.003	.234
Concentration	.383	.086	.275	.046	.083	.171	.173	.431
Physical safety	.224	-.194	.332	.129	.229	.147	-.052	.124
Physical environment	.003	-.034	.419	.310	.144	.285	.031	.117
Energy	.176	.159	.178	.093	.335	.410	.205	.120
Body image	.085	.107	.017	.476	.162	.463	-.067	.168
Financial resources	.061	-.006	.422	.169	.071	.232	-.044	.173
Information	.287	-.064	.507	.030	.107	.150	.100	-.011
Leisure	.009	.002	.105	.032	-.077	.652	.141	.023
Awe	.184	.217	.124	.147	.064	.538	.024	.010
Spiritual strength	.091	.794	.005	.134	-.110	.204	.025	-.156
Inner peace	.838	.064	.095	-.035	.022	.147	-.046	-.170
Hope	.668	-.033	.309	.039	.064	.048	.043	.083
Mobility	.231	-.110	.249	-.129	.265	.002	.398	.108
Sleep	.275	-.399	.141	-.255	-.175	-.183	-.346	.071
Activities of Daily Living	.251	-.084	.242	.055	.422	.071	.368	.063
Work	-.086	.132	.029	.325	.250	.227	.702	-.002
Self-esteem	.053	.117	.073	.697	.110	.191	.181	.011
Personal relationships	.324	-.122	.335	.589	.137	-.101	-.097	.171
Sex life	-.074	.085	.210	.410	.021	-.050	.066	.092
Social support	.215	-.029	.374	.201	.283	.111	.003	.131
Home environment	.096	.096	.571	.134	.004	-.039	.056	.095
Access to health services	.153	.059	.627	.012	-.138	.034	.064	-.117
Transport	.075	.033	.293	.184	-.209	.138	.219	.167
Wholeness	.127	.233	.234	.534	-.098	.070	.069	-.031
Negative feelings	.424	.041	.239	.191	.160	.258	.029	.021
<i>Eigenvalues</i>	6.31	3.82	2.41	1.82	1.48	1.44	1.19	1.07
<i>% Variance</i>	8.99	8.40	7.43	7.42	5.40	5.21	3.66	2.20

Rotation converged in 9 iterations.

Table 5: Test-retest reliability for the domains of the WHOQOL-SRPB BREF and WHOQOL-SRPB Importance measure.

WHOQOL-SRPB BREF Domains	Time A Mean (<i>SD</i>) (<i>n</i>= 107)	Time B Mean (<i>SD</i>) (<i>n</i>=95)	<i>t</i>	<i>p</i>
Physical QoL	75.53 (14.25)	75.98 (12.02)	-0.35	.73
Psychological QoL	72.42 (10.01)	71.16 (10.01)	1.23	.22
Social QoL	77.19 (12.23)	76.32 (14.50)	0.67	.49
Environmental QoL	76.05 (10.69)	76.05 (10.09)	0.00	1.0
Spiritual QoL	60.86 (13.82)	60.53 (15.04)	.64	.52
Importance of QoL				
Physical Imp	4.18 (0.30)	4.15 (0.28)	2.20	.07
Psychological Imp	3.98 (0.28)	3.94 (0.32)	1.04	.36
Social Imp	4.06 (0.56)	3.97 (0.54)	2.03	.18
Environmental Imp	4.01 (0.20)	3.98 (0.19)	0.79	.46
Spiritual Imp	2.98 (0.52)	2.95 (0.55)	2.55	.03*

Paired Samples Test